



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/789,210

02/27/2004

Thomas J. Plona

26.0273 US

9128

7590

10/07/2005

Schlumberger K.K.  
Intellectual Property and Legal Department  
2-2-1 Fuchinobe, Sagamihara-shi  
Kanagawa-ken, 229-0006  
JAPAN

EXAMINER

HUGHES, SCOTT A

ART UNIT

PAPER NUMBER

3663

DATE MAILED: 10/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/789,210

Applicant(s)

PLONA ET AL.

Examiner

Scott A. Hughes

Art Unit

3663

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) 19-73 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/27/2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>6/6/2005</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

2/✓

## **DETAILED ACTION**

### ***Election/Restrictions***

Claims 19-73 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 9/15/2005.

Applicant's election with traverse of claims 1-18 in the reply filed on 9/15/2005 is acknowledged. The traversal is on the ground(s) that the claimed process and system may not practically be implemented by hand. The applicant argues that something, such as a computer processor, is necessary for the practical implementation of the invention. This is not found persuasive because the language of the independent claims allows for the process to be carried out by hand. For the purpose of restriction, it is not considered whether or not doing the process by hand would be practical, only that the method described by the limitations of the claims could be done by hand. In this case, it is still considered that the method could be performed by hand or at least partially by hand, which is different than the apparatus described in the other claims.

The requirement is still deemed proper and is therefore made FINAL.

### ***Drawings***

Color photographs and color drawings are not accepted unless a petition filed under 37 CFR 1.84(a)(2) is granted. It is noted that applicant submitted a petition on 2/27/2004 for color drawings. That petition has not been granted as of yet. In the event

Art Unit: 3663

that the petition is granted, the color drawings submitted by the applicant will be accepted for examination. Any such petition must be accompanied by the appropriate fee set forth in 37 CFR 1.17(h), three sets of color drawings or color photographs, as appropriate, and, unless already present, an amendment to include the following language as the first paragraph of the brief description of the drawings section of the specification:

The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

Color photographs will be accepted if the conditions for accepting color drawings and black and white photographs have been satisfied. See 37 CFR 1.84(b)(2).

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-18 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The claims contain the limitations "in a manner which enables an observer" and "configured or designed to allow a user." These limitations depend upon the actions and skill level of the observer/user for the enablement of the claim. The way the

Art Unit: 3663

claim limitations are written, it would be optional for the user/observer to do the step of the method.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims contain the limitations "in a manner which enables an observer" and "configured or designed to allow a user." These limitations depend upon the actions and skill level of the observer/user. Therefore, the claims are indefinite because it is not clear what specifically about the method would allow a user/observer to perform the steps of the method. It is also indefinite because the observer/user has the option of performing the steps or not performing from the way the claims are written.

The phrases "in a manner which enables an observer" and "configured or designed to allow a user" provide language that suggests or makes optional but does not require steps to be performed or does not limit the scope of a claim or claim limitation (MPEP § 2106(II,C)). Accordingly, the metes and bound of the claim can not be ascertained by one having ordinary skill in the art.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-13 are rejected under 35 U.S.C. 102(b) as being anticipated by Bose.

With regard to claim 1, Bose discloses a method for facilitating quality control analysis of sonic logging data associated with an earth formation surrounding a borehole (abstract; Column 2). Bose discloses generating slowness frequency analysis log information which includes slowness-versus-frequency dispersion curve information associated with a first depth interval (Figs. 8-16) (Column 8). Bose discloses displaying, using a graphical display format, the SFA log information as an SFA log display, the SFA log display including a first axis corresponding to depth, and a second axis corresponding to wave slowness characteristics (Figs. 8-16). Bose discloses that the information displayed in the SFA log display is presented in a manner which enables an observer of the SHA log display to visually compare relative frequency dispersive characteristics of the dispersion curve information over selected portions of the first depth interval (Figs. 8-16) (Column 8, Line 50 to Column 10, Line 25).

With regard to claims 2-3, Bose discloses that the wave slowness characteristics are expressed in terms of wave slowness. Bose discloses that the dispersion curve information is expressed in terms of wave slowness (Figs. 7-12). It is known that slowness is the inverse of velocity, and therefore the displays of Bose could be turned changed to be in terms of velocity by inverting the slowness values (Column 1).

With regard to claim 4, Bose discloses that the information displayed in the SFA log display is further presented in a manner which enables an observer of the SFA log display to visually assess homogeneous and inhomogeneous characteristics of the dispersion curve information over selected portions of the first depth interval (Fig. 17) (Columns 9-10).

With regard to claim 5, Bose discloses that the information displayed in the SFA log display is further presented in a manner which enables an observer of the SFGA log display to visually assess isotropic and anisotropic characteristics of the dispersion curve information over selected portions of the first depth interval (Fig. 17) (Columns 9-10).

With regard to claim 6, Bose discloses that the dispersion curve information includes projected slowness-versus-frequency dispersion curve information (Figs. 8-16).

With regard to claim 7, Bose discloses that the projected slowness-versus-frequency dispersion curve information is represented in one dimension (Figs. 8-16).

With regard to claim 8, Bose discloses that the dispersion curve information includes dipole flexural information which has been projected onto a slowness axis (Column 2, Lines 35-45; Columns 8-9) (Fig. 8).

With regard to claim 9, Bose discloses that the dispersion curve information includes dipole compressional information that has been projected onto a slowness axis (Column 1).

With regard to claim 10, Bose discloses that the dispersion curve information corresponds to sonic logging data generated by at least one source selected from the

group consisting of a dipole source, a monopole source, and a quadrapole source (Column 5, Line 43 to Column 6, Line 56).

With regard to claim 11, Bose discloses that the dispersion curve information corresponds to sonic logging data selected from the group consisting of fast dipole shear data, slow dipole shear data, low-frequency monopole data, and high frequency monopole data (Columns 9-10) (Figs. 7-13).

With regard to claim 12, Bose discloses generating, using the slowness-versus-frequency dispersion curve information, estimated wave slowness information associated with the selected portions of the first depth interval. Bose discloses displaying an overlay of the estimated wave slowness information onto the SFA log display, wherein the display of the overlay information onto the SFA log display is presented in a manner which enables an observer of the SFA log display to visually assess the relative accuracy of the estimate wave slowness information over the selected portions of the first depth interval (Columns 9-10).

With regard to claim 13, Bose discloses that the estimated wave slowness information includes information from the group consisting of fast estimated shear wave slowness, estimated compressional wave slowness, and estimated Stoneley wave slowness (Columns 9-10).

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



Art Unit: 3663

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 14-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bose as applied to claim 1 above, and further in view of Stark.

With regard to claim 14, Bose does not disclose that the SFA log further comprises a navigable pointer mechanism configured or designed to allow a user to navigate within the SFA log display in order to access additional sonic logging information relating to selected depths. Stark discloses the use of a navigable pointer mechanism in seismic displays for the purpose of accessing data, selecting parts of a display, and navigating between displays (Columns 4-5, 8-9) (Figs. 4-5). It would have been obvious to use a pointer mechanism as disclosed by Stark in order to navigate and select the data in the display in order to select data from a display that will be processed or that will be extract data about a specific part of the display.

With regard to claim 15, Bose discloses that the SFA log display further includes depth specific sonic logging information (Columns 11-13). Bose does not disclose that the information relates to a depth selected by the navigable pointer mechanism. Stark discloses selecting data by use of a pointer mechanism (Columns 4-5, 8-9) (Figs. 4-5). It would have been obvious to use a pointer mechanism as disclosed by Stark in order to navigate and select the data in the display in order to select data from a display that will be processed or that will be extract data about a specific part of the display.

With regard to claim 16, Bose does not disclose that the navigable pointer mechanism is further configured or designed to automatically scroll through the SFA

projection log display in a manner which causes additional depth specific sonic logging information to automatically be displayed. Stark discloses that the pointing mechanism (mouse) can continuously provide points as the mouse is moved in order to provide a continuous "movie" style presentation. It would have been obvious to modify Bose to include using a mouse that continuously provides information about the part of the display it is placed over in order to be able to see information about any part of the display on which the mouse is placed in order to compare it to other parts of the display.

With regard to claim 17, Bose does not disclose that the SFA log display further comprises a navigable pointer mechanism configured or designed to allow a user to navigate within the SFA log display in order to access depth specific sonic logging information associated with selected depths. Bose discloses that the SFA log display further includes depth specific display information relating to selected characteristics of the depth specific sonic logging information (Columns 11-13). Stark discloses the use of a navigable pointer mechanism in seismic displays for the purpose of accessing data, selecting parts of a display, and navigating between displays (Columns 4-5, 8-9) (Figs. 4-5). It would have been obvious to use a pointer mechanism as disclosed by Stark in order to navigate and select the data in the display in order to select data from a display that will be processed or that will be extract data about a specific part of the display.

With regard to claim 18, Bose discloses that the depth specific display information is displayed concurrently with the SFA log information (Figs. 8-22).

### ***Conclusion***

The cited prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A. Hughes whose telephone number is 571-272-6983. The examiner can normally be reached on M-F 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SAH

SAH

  
JACK KEITH  
PRIMARY EXAMINER  
SPE 166